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SOUTHWEST GAS CORPORATION

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AZ CORP COMMISSION
DOCUMENT CONTROL

Arizona Corporation Commission

DOCKETED

February 17, 2005

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Docket Control
Arizona Corporation Commission
1200 West Washington Street
Phoenix, AZ 85007

DOCKETED BY	<i>cm</i>
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Subject: Docket Nos. RE-00000C-00-0377 and RE-00000C-05-0030

Please accept the original and thirteen (13) copies of Southwest Gas Corporation's comments on the Staff Report on Proposed Changes to the Environmental Portfolio Standard Rules for filing.

Respectfully,

Randall W. Sable, Manager
State Regulatory Affairs

Enclosures

c: Steve Ahern/RUCO
Ray Williamson/ Utilities Engineer

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BEFORE THE ARIZONA CORPORATION COMMISSION

2005 FEB 17 P 2: 36

In the Matter of the Notice of Proposed Rulemaking for the Environmental Portfolio Standard

AZ CORP COMMISSION DOCUMENT CONTROL

Docket Nos. RE-00000C-00-0377 RE-00000C-05-0030

COMMENTS OF SOUTHWEST GAS CORPORATION ON THE STAFF REPORT ON PROPOSED CHANGES TO THE ENVIRONMENTAL PORTFOLIO STANDARD RULES

Southwest Gas Corporation (Southwest or Company) herewith respectfully submits its comments on the Staff Report on Proposed Changes to the Environmental Portfolio Standard Rules (Staff Report) in accordance with the Arizona Corporation Commission (Commission) Staff's letter dated January 21, 2005.

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Introduction and Summary

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Southwest appreciates the opportunity to comment on the Staff Report. Southwest is a firm supporter of renewable technologies and energy efficiency. Southwest has actively participated in this rulemaking docket and looks forward to providing the Commission and Utilities Division Staff (Staff) its perspective on the proposed revisions and what should be done to ensure that the increased funding and use of renewable technologies is done in a manner that provides the greatest benefit to Arizona's citizens.

The Staff Report provides a good first step towards identifying possible changes, including new technologies that should be considered for the Environmental Portfolio Standard (EPS) Rules. Renewable energy should be a part of the energy mix in Arizona in the coming years.

However, from Southwest's perspective, certain issues have not been addressed and warrant further discussion and deliberation. They are: (1) resource efficiency; (2) export of electricity out-of-state; and (3) conservation of precious water resources. Southwest also notes that the 20 percent limitation is proposed to be removed from solar water heating and that solar is eligible to displace all fossil fuels, including natural gas. As a result, Southwest, in consideration of these issues, recommends that a prioritization system for EPS incentives be implemented to maximize the benefits to be obtained from the revised EPS Rules. Further, the subject of net revenue (margin) that will be lost by natural gas utilities from the potential displacement of natural gas water heating or space heating should be addressed.

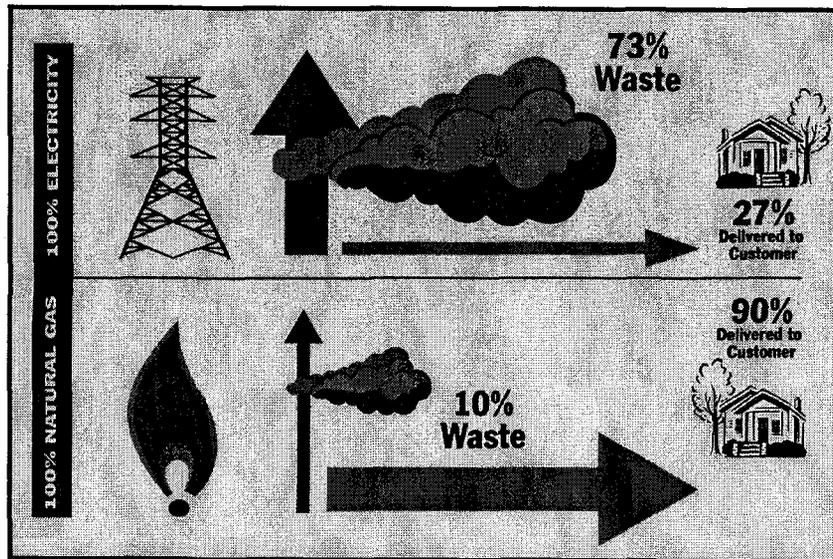
Resource Efficiency

On page 14 of the Staff Report, under the caption "Solar Water Heating to Replace Fossil Fuels", the statement is made that, "By adding solar water heating that replaces fossil fuels, the Commission would reduce the use of fossil

fuels, such as natural gas, for water heating and free up the fossil fuels for use in other critical uses such as the production of electricity.....". This statement could lead the Commission to conclude that natural gas for electric generation is a more efficient use than using natural gas at the source -- for water and space heating. This would be an erroneous conclusion.

Using electricity to heat water is an inefficient process compared to heating water using natural gas. Nearly all marginal electric production is natural gas-fired. Many existing electric utility power plants are only 30 percent efficient or less, without considering electricity lost in transmission to load-consuming centers. In contrast, natural gas directly consumed by a water heater can achieve 80 percent to 90 percent efficiency. This means that it takes approximately three times as much natural gas, consumed at a power plant, to produce the equivalent energy to heat water with electricity than it does to heat water directly with gas. The California Energy Efficiency Building Code has recognized this energy difference and utilizes a 3:1 source energy ratio when comparing natural gas and electricity. Southwest agrees that the use of solar or other renewable energies to displace the consumption of fossil fuels is an appropriate goal in the development of the EPS Rules. However, there should be an emphasis on displacing all inefficient electric water heating before resources are used to displace highly efficient gas water heating. The Staff Report, unfortunately, does not recognize this, and leaves the decision of which resource to displace -- gas or electric -- up to the electric utilities administering the EPS funds.

Efficiency Comparison



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Export of Electricity Out-Of-State

A large portion of the electricity produced in Arizona is sold out-of-state. Data from the United States Energy Information Administration (EIA) for 2002 indicates that of the 94,132 GWh of net generation in Arizona, 31,531 GWh (or 33 percent) of that was sold outside of Arizona, much of it in California. Just one merchant power plant of 1060 MW can use more natural gas than all of Southwest's residential customers use in Arizona in a whole year. Thus,

displacing efficient natural gas water and space heating for Arizona consumers so that out-of-state electricity users receive the benefits of electricity generated by natural gas (a much less efficient process), makes little sense for the overall welfare of Arizona residents. In California, for example, the state government mandates natural gas for water heating and space heating in new construction when it is economically feasible. Consequently, the natural gas dedicated to Arizona would essentially be used to benefit California residents, not the citizens of Arizona.

Water Conservation

Water conservation is a critical resource and environmental issue in Arizona. A power plant producing electricity uses billions of gallons of water. The Southwest Energy Efficiency Project reports that power plants use 0.33 to 0.67 gallons per kWh produced¹. "The Last Straw", a document sponsored by the Hewlett Foundation, reports similar, but slightly smaller water usage. As a result, a new 1060 MW combined-cycle plant with 80 percent availability would use over 2.45 billion gallons of water per year based on the 0.33 gallons per kWh figure. The use of natural gas for end-uses, such as water heating and space heating, instead of electricity, will reduce the need for electrical generation, and in turn, the waste of water. As a result, the use of water for electric generation is a key factor to bear in mind when considering revisions to the EPS Rules.

¹ "The New Mother Lode: The Potential for More Efficient Electricity Use in the Southwest," Southwest Energy Efficiency Project, November 2002.

Recommendations

For the reasons stated above, Southwest recommends that the use of EPS funding to displace existing fossil fuel-fired water and space heating be structured in a tiered system. The most inefficient uses of energy should be displaced first by solar or renewable resources before more efficient uses of energy are displaced. This can be accomplished by implementing a tiered system of incentives to encourage the displacement of the less efficient uses before the more efficient uses. This tiered system is particularly relevant for the displacement of water and space heating by solar. If the proposed revisions to the EPS Rules in these areas are not modified, the issue of lost margin to gas utilities must be fully addressed to ensure that upward pressure on gas utilities' customer rates, due to declining customer usage, is not inadvertently encouraged by the EPS Rules.

Southwest is appreciative of the opportunity to comment on the proposed changes to the EPS Rules contained in the Staff Report and thanks the Staff for the opportunity to participate in this process. Southwest looks forward to actively participating in this proceeding and believes the changes to the EPS Rules proposed by the Company will encourage the development of energy-efficient, renewable resources for the benefit of all the citizens of the State of Arizona.